

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A resist mask for measuring alignment on a substrate, the resist mask comprising at least one alignment mark, wherein the alignment mark includes patterned structures arranged as part of the resist mask and having a height that is less than ~~or equal to~~ the thickness of an unpatterned resist layer forming the resist mask, and wherein at least some of the pattern structures have a lateral spacing that is smaller than the wavelength of light used for alignment measurement.
2. (Original) The mask of claim 1, wherein the patterned structures further comprise a plurality of isolated resist features arranged to impart the desired size and shape of the alignment mark.
3. (Original) The mask of claim 2, wherein the patterned structures further comprise an array of features.
4. (Original) The mask of claim 2, wherein the patterned structures further comprise a stochastic assembly of features.
5. (Original) The mask of claim 2, wherein the patterned structures appear rectangular in cross-section and top view.
6. (Original) The mask of claim 1, wherein the lateral spacing of the patterned structures is less than about half the wavelength of light used for alignment measurement.
7. (Original) The mask of claim 1, wherein the at least one alignment mark further includes a continuous resist layer upon which the patterned structures are formed.

8. (Original) The mask of claim 7, wherein the patterned structures further comprise an array of features.
9. (Original) The mask of claim 7, wherein the patterned structures further comprise an stochastic assembly of features.
10. (Original) The mask of claim 8, wherein the patterned structures appear rectangular in cross-section and top view.
11. (Original) The mask of claim 7, wherein the lateral spacing of the patterned structures is less than about half the wavelength of light used for alignment measurement.
12. (Currently Amended) A resist mask for measuring alignment on a substrate, the resist mask comprising at least one alignment mark, wherein the alignment mark comprises at least two distinct regions, at least one distinct region formed from a plurality of patterned features arranged as part of the resist mask and having a height that is less than ~~or equal to~~ the thickness of an unpatterned resist layer forming the resist mask, and wherein at least some of whose lateral spacing is smaller than the wavelength of light used for alignment measurement.
13. (Original) The mask of claim 12, wherein each region of the at least two distinct regions includes a characteristic spacing between features, the characteristic spacing differing between regions.
14. (Original) The mask of claim 13, wherein the patterned structures further comprise a plurality of isolated resist features arranged to impart the desired size and shape of the at least two distinct regions within the alignment mark.

15. (Original) The mask of claim 13, wherein the mark comprises two concentric regions, the outer region comprising a smaller characteristic feature spacing than the inner region.

16. (Original) The mask of claim 14, wherein the mark comprises two concentric regions, the outer region comprising a smaller characteristic feature spacing than the inner region.

17. (Previously Canceled)

18. (Previously Canceled)

19. (Previously Canceled)

20. (Previously Canceled)

21. (Previously Added) A resist mask for measuring alignment, the resist mask comprising at least one alignment mark, wherein the alignment mark includes patterned structures at least some of whose lateral spacing is smaller than the wavelength of light used for alignment measurement, and wherein the at least one alignment mark further includes a continuous resist layer upon which the patterned structures are formed.

22. (Previously Added) The mask of claim 21, wherein the patterned structures further comprise an array of features.

23. (Previously Added) The mask of claim 22, wherein the patterned structures appear rectangular in cross-section and top view.

24. (Previously Added) The mask of claim 21, wherein the patterned structures further comprise an stochastic assembly of features.

U.S. Patent Application Serial No. 10/685,004
Amendment

25. (Previously Added) The mask of claim 21, wherein the lateral spacing of the patterned structures is less than about half the wavelength of light used for alignment measurement.